DDU 310-DL32/64

Dashboard with data logger - TFT color display

The DDU 310-DL32/64 is a combined dashboard and input module for use as a stand-alone display and data logger unit or as an integral part of a complete data acquisition and monitoring system for use in the demanding environment to be found in motorsports vehicles.

The DDU 310-DL32/64 is equipped with a complete range of analogue and digital inputs and ten-page liquid crystal display with configurable windows for an easily configured and personalised screen layout. A graphical bar indicator is typically used for representing engine revs.

A fast Ethernet bus is used for graphical layout load, channels' configuration and data download. As part of the Magneti Marelli data acquisition and telemetry system, the DDU 310-DL32/64 (with internal data logger) can communicate over a CAN network with a range of additional data loggers receiving and displaying data from the logger as well functioning as an additional input module.

For further information or different solution, please contact our technical department.

Technical data

Analogue inputs

Single-ended (0 to 5 V)	5
NTC/PT1000 temperature sensor (SW selectable)	2
NTC internal temperature sensor	1

Digital inputs

Pick-ups magnetic or Hall effect (RPM)	1
Hall effect (wheelspeed)	3
On/Off digital	2
Lap Trigger	2
"Code Load" enable pin	1

Outputs

Voltage references (@ 5 V)	1	
Low-side (@ 12 V)	2	
Shift Lamp (adjustable brightness)	6	
max output current	70	mA
Alarm (adjustable brightness)	2	
max output current	70	mA

Communications

CAN line (1 Mbit/s (*))	2
Ethernet line (10/100 Mbit/s)	1
RS232	1

Note:

(*) Configurable on request

Mechanical/Electrical characteristics

Power supply		
total system operating	10 to 18	V
Operating temperature range (internal)	0 to 60	°C
Vibrations range tested (30 to 1500 Hz)	10	g
EMI immunity tested (1 to 400 MHz)	200	mA
Protection class	IP 65	
Transflective dot matrix color display	TFT 6.2"	
Connectors		
AS214-35 PN 919Y	37 pin	
Dimensions		
without connector	188 x 110 x 34.4	mm
with connector	188 x 110 x 59.2	mm
Weight	580	g

Logic core

Microcontroller A (80 MIPS RISC)	1	
Microcontroller B (64 MIPS RISC)	1	
FPGA (50k gates)	1	
Graphic display controller	1	
DPR	32	Kbyte
Flash E2PROM (microcontroller A)	1	Mbyte
RAM memory (microcontroller A)	48	Kbyte
Flash memory (microcontroller B)	512	Kbyte
Ram memory (microcontroller B)	4	Kbyte
Flash NV Ram	32	Mbyte
RAM memory	512	Kbyte
E2PROM	32	Kbyte
Time keeper	1	

Logging

Flash disk memory	32 or 64	Mbyte
Logged channels	up to 128	
Logging rate	up to 48	Kbyte/s
Sampling rate	up to 1000	Hz

Ordering Information

Label	Description	Order code
DDU 310-DL32	Dashboard with data logger 32 Mbyte - TFT color display	083818184600
DDU 310-DL64	Dashboard with data logger 64 Mbyte - TFT color display	083818184800

For further details please contact

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Characteristics

- 5 Single-ended
- 1 Pick-ups or Hall effect
- 3 Hall effect
- 32 or 64 Mbyte logging memory
- Up to 128 logged channels
- Up to 48 Kbyte/s logging rate
- Sampling rates up to 1000 Hz
- 2 CAN communication buses
- 1 Ethernet line
- Data download via standard 100BaseT Ethernet
- Floating point data management
- Pick-up inputs for wheel speed and distance measurement
- Requires Wintax3 analysis software (compatible Win2K/XP)
- Requires Axon logging setup tool

Main Features

- Page and channel name labels
- Transmit internal diagnostic over CAN bus
- 48 alarm channels with programmable thresholds
- Display dedicated to 48 internal channels
- Lap time message displayed on dedicated page
- PC interface via Ethernet for loading graphical layout
- Easy to use and configure
- Designed for rugged applications

Benefits

- TFT 6.2” transflective dot matrix color display
- Graphical engine revolution counter with configurable non-linear scale
- Alarm condition displays channel name and value (with priorities for multiple alarms)
- Backlight regulation based on internal photocell
- Inputs configurable to suit all sensors in the product range
- 2 push-button on the front panel for page selection, alarm level set, rpm/speed conversions, message hold time
- 6 high-brightness warning lights yellow/red for gear change (with programmable threshold) and 2 blue for general alarm condition indication
- 2 outputs for external warning lamps with short-circuit protections

CAN Communication

- Partial time (only for SRA DL) up to 16 sections
- Differential time (only for SRA DL) between current partial time and the one of the best lap

Stand alone mode

- Direct connection to 11 sensors (active and passive)
- Beacon input for lap time measurement
- Lap total counter

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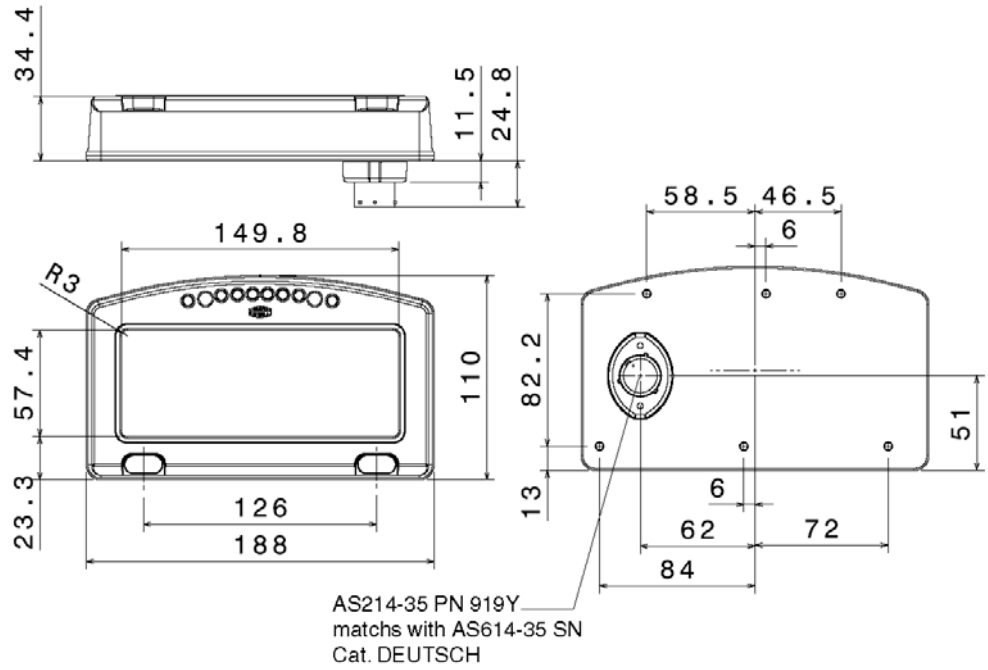
Dimensions



Dimensions in millimetres

Connector Pin Out

DDU 310 pin-out: AS214-35PN 919Y								
Pin	**Name**	**Descr.**	**Pin**	**Name**	**Descr.**	**Pin**	**Name**	**Descr.**
1	**Vbattp**	Positive Battery Supply	**14**	**EXT_VREF_OUT**	External Voltage Reference Out (5 V)	**27**	**GND_HALL**	Ground Hall
2	**Vbattn**	Negative Battery Supply	**15**	**EXT_AGND_OUT**	External Analogue Ground Out	**28**	**EXT_BUTTON_3**	External Button3
3	**CAN1_H_CONN**	CAN1 Serial Line (H) Communication line with ECU	**16**	**SE_ADI_1**	Single Ended Input 1 (0 to 5V)	**29**	**EXT_BUTTON_4**	External Button4
4	**CAN1_L_CONN**	CAN1 Serial Line (L) Communication line with ECU	**17**	**SE_ADI_2**	Single Ended Input 2 (0 to 5V)	**30**	**OUT_LOWSIDE1**	Output Low-side1 (12 V)
5	**CAN2_H_CONN**	CAN2 Serial Line (H)	**18**	**SE_ADI_3**	Single Ended Input 3 (0 to 5V)	**31**	**OUT_LOWSIDE2**	Output Low-side2 (12 V)
6	**CAN2_L_CONN**	CAN2 Serial Line (L)	**19**	**SE_ADI_4**	Single Ended Input 4 (0 to 5V)	**32**	**IN_PICKUP_P**	Electromagnetic Pick-up Positive_In-Hall4 (Wheel Rear Left)
7	**TX_ETH_P**	TX_P Ethernet 10/100 Base T	**20**	**SE_ADI_5**	Single Ended Input 5 (0 to 5V)	**33**	**IN_PICKUP_N**	Electromagnetic Pick-up Negative
8	**TX_ETH_N**	TX_N Ethernet 10/100 Base T	**21**	**IN_TEMP1**	NTC-PT1000 Input 1	**34**	**IN_BEACON**	Digital Input for Lap Trigger
9	**RX_ETH_P**	RX_P Ethernet 10/100 Base T	**22**	**IN_TEMP2**	NTC-PT1000 Input 2	**35**	**IN_SPLTIME**	Digital Input for Lap Trigger
10	**RX_ETH_N**	RX_N Ethernet 10/100 Base T	**23**	**GND_TEMP**	Analogue Ground Temp	**36**	**GND_DIG_IN**	Ground Digital Input
11	**TXD_RS232**	TX RS232 line	**24**	**IN_HALL1**	Hall Effect Sensors Input 1 (Wheel Front Right)	**37**	**IN_ENCP**	Enable Code Programming
12	**RXD_RS232**	RX RS232 line	**25**	**IN_HALL2**	Hall Effect Sensors Input 2 (Wheel Front Left)			
13	**GND_RS232**	Ground RS232	**26**	**IN_HALL3**	Hall Effect Sensors Input 3 (Wheel Rear Right)			

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